

09/207947

**ABSTRACT OF THE DISCLOSURE**

In the coding device and method, m-bit information words are converted into n-bit code words such that the coding rate  $m/n$  is greater than  $2/3$ . The n-bit code words are divided into a first type and a second type, and into coding states of a first kind and a second kind such that an m-bit information word is converted into an n-bit code word of the first or second kind if the previous m-bit information word was converted into an n-bit code word of the first type and is converted into an n-bit code word of the first kind if the previous m-bit information word was converted into an n-bit code word of the second type. In one embodiment, n-bit code words of the first type end in zero, n-bit code words of the second type end in one, n-bit code words of the first kind start with zero, and n-bit code words of the second kind start with zero or one. Furthermore, in the embodiments, the n-bit code words satisfy a dk-constraint of (1,k) such that a minimum of 1 zero and a maximum of k zeros falls between consecutive ones. The coding device and method are employed to record information on a recording medium and thus create the recording medium. The coding device and method are further employed to transmit information. In the decoding method and apparatus, n-bit code words are decoded into m-bit information words. The decoding involves determining the state of a next n-bit code word, and based on the state determination, the current n-bit code word is converted into an m-bit information word. The decoding device and method are employed to reproduce information from a recording medium, and to receive information transmitted over a medium.